

WHAT IS CLAIMED IS:

1. A video system, comprising:

a video source operable to transmit an output signal on a transmission line, the output signal having a format such that first portions of the output signal include active video signals and second portions of the output signal lack active video signals;

a plurality of video receivers, each said receiver being operable to display images based upon the active video signals and to transmit a respective data signal on a respective one of a plurality of ports; and

a distribution device electrically connected to said transmission line and to each of said ports, said distribution device being operable to transmit each of the data signals to said video source on said transmission line only during time periods when the second portions of the output signal are being transmitted on said transmission line, said distribution device including a plurality of amplifiers, each said amplifier having an input and an output, each said amplifier being operable to receive signals on said input for transmission on said output as amplified signals, each said amplifier being operable to block signals received on said output from being transmitted on said input, each said amplifier being operable to transmit a respective said amplified signal to a respective one of said receivers on a respective one of said ports, each of the amplified signals being dependent upon the output signal and upon a data signal transmitted on said transmission line from the receivers other than said respective receiver.

2. The system of Claim 1 wherein the data signals transmitted by said receivers comprise upstream data signals, the second portions of the output signal comprising downstream data signals, said video source being operable to transmit the output signal on said transmission line, each said amplified signal being dependent upon the active video signal, the downstream data signal, and an upstream data signal from a receiver other than said respective receiver.

3. The system of Claim 1 wherein each said amplified signal is dependent upon the output signal and upon each of the data signals from the receivers other than said respective receiver.

4. The system of Claim 1 wherein each said amplifier comprises a one-way active device that transmits signals only on its output.

5. The system of Claim 1 wherein said distribution device includes bypass circuitry operable to transmit the data signals from each of the receivers to the transmission line and to the inputs of said amplifiers such that the data signals bypass said amplifiers.

6. The system of Claim 5 wherein said bypass circuitry is operable to transmit the data signals from each of the receivers to the transmission line and to the inputs of all of said amplifiers not corresponding to said receiver from which said data signal originates.

7. The system of Claim 1 wherein said transmission line comprises a coaxial cable.

8. A video system, comprising:

a video source operable to transmit an output signal on a transmission line, the output signal having a format such that first portions of the output signal include active video signals and second portions of the output signal lack active video signals;

a plurality of video receivers, each said receiver being operable to display images based upon the active video signals and to transmit a respective data signal on a respective port; and

a distribution device in electrical communication with said transmission line and with each of said second transmission lines, said distribution device being operable to transmit each of the data signals to said video source on said transmission line only during time periods when the second portions of the output signal are being transmitted on said transmission line, said distribution device including a plurality of active devices, each said active device being operable to transmit a respective active-device-signal to a respective one of said receivers on a respective one of said ports, each of the active-device-signals being dependent upon the output signal and upon at least one of the data signals transmitted on said transmission line from the receivers other than said respective receiver.

9. The system of Claim 8 wherein each said active device has an input and an output, each said active device being operable to pass signals from said input to said output and to prevent signals from passing through said active device from said output to said input.

10. The system of Claim 8 wherein the data signals transmitted by said receivers comprise upstream data signals, the second portions of the output signal comprising downstream data signals, said video source being operable to transmit the output signal on said transmission line, each said active-device-signal being dependent upon the output signal, the

downstream data signal, and an upstream data signal from the receivers other than said respective receiver.

11. The system of Claim 8 wherein each said active-device-signal is dependent upon the output signal and upon each of the data signals from the receivers other than said respective receiver.

12. The system of Claim 8 wherein each said active device comprises a one-way active device that transmits signals only on its output.

13. The system of Claim 8 wherein said distribution device includes bypass circuitry operable to transmit the data signals from each of the receivers to said transmission line and to respective inputs of said active devices such that the data signals bypass said active devices.

14. The system of Claim 13 wherein said bypass circuitry is operable to transmit the data signals from each of the receivers to said transmission line and to the inputs of all of said amplifiers not corresponding to said receiver from which said data signal originates.

15. The system of Claim 8 wherein said transmission line comprises a coaxial cable.

16. A video distribution apparatus, comprising:

a first port configured to be electrically connected to a video source and to receive an output signal from the video source, the output signal having a format such that first portions of the output signal include active video signals and second portions of the output signal lack active video signals;

a plurality of second ports, each said second port being configured to be electrically connected to a respective video receiver;

a plurality of active devices, each said active device having an input and an output, each said output being electrically connected to a corresponding one of said second ports, each said input being configured to receive the output signal from the video source via said first port; and

bypass circuitry including a synchronization device operable to identify when the first portions of the output signal are received by said first port and when the second portions of the output signal are received by said first port, said bypass circuitry being operable to transmit data signals from each of said second ports to said first port and to said inputs of said active devices

such that:

the data signals bypass said active devices;

the first portions of the output signal are received by said first port during first periods in time, the data signals are received by said first port during second periods in time, the first periods in time and the second periods in time being mutually exclusive; and

the first portions of the output signal are received by said inputs of said active devices during third periods in time, the data signals are received by said inputs of said active devices during fourth periods in time, the third periods in time and the fourth periods in time being mutually exclusive.

17. The apparatus of Claim 16 wherein said bypass circuitry is operable to transmit data signals from each of the second ports to the first port and to the inputs of all of said amplifiers not corresponding to said second port from which said data signal originates.

18. The system of Claim 16 wherein each said active device is operable to pass signals from said input to said output and to prevent signals from passing through said active device from said output to said input.

19. The system of Claim 16 wherein the data signals from said second ports comprise upstream data signals, each said input of said active devices being configured to receive the active video signals and downstream data signals from the video source via said first port, each said active device being operable to transmit active-device-signals dependent upon the active video signals, the downstream data signals, and the upstream data signals.

20. The system of Claim 16 wherein each said active device comprises a one-way active device that transmits signals only on its output.

21. The system of Claim 16 wherein said bypass circuitry is operable to transmit the data signals from each of the second ports to the first port and to the inputs of only said active devices other than said active device that corresponds to said second port from which said data signal originates.

22. The system of Claim 16 wherein the first periods in time correspond to the third periods in time, and the second periods in time correspond to the fourth periods in time.

23. The system of Claim 16 wherein said synchronization device includes:
a video sync separator operable to extract synchronization information from the output signal;

a video line counter coupled to said video sync separator and operable to receive the synchronization information from the output signal and calculate a video line count; and

a data window decoder coupled to said video line counter and operable to:

prevent the data signals from being received by said first port during the first periods in time; and

prevent the data signals from being received by said inputs of said active devices during the third periods in time.

24. A video distribution apparatus, comprising:

a first port configured to be electrically connected to a video source and to receive an output signal from the video source, the output signal having a format such that first portions of the output signal include active video signals and second portions of the output signal lack active video signals;

a second port configured to be electrically connected to a video receiver;

an active device having an input and an output, said output being electrically connected to said second port, said input being configured to receive the output signal from the video source via said first port; and

bypass circuitry including a synchronization device operable to identify when the first portions of the output signal are received by said first port and when the second portions of the output signal are received by said first port, said bypass circuitry being operable to transmit data signals from said second port to said first port such that:

the data signals bypass said active device; and

the first portions of the output signal are received by said first port during first periods in time, the data signals are received by said first port during second periods in time, the first periods in time and the second periods in time being non-overlapping.

25. The system of Claim 24 wherein said active device comprises a one-way active device that transmits signals only on its output.

26. The apparatus of Claim 24 wherein said synchronization device includes:
a video sync separator operable to extract synchronization information from the output signal;
a video line counter coupled to said video sync separator and operable to receive the synchronization information from the output signal and calculate a video line count; and
a data window decoder coupled to said video line counter and operable to prevent the data signals from being received by said first port during the first periods in time.